

**Japan**  
**Report on EMF Activities from**  
**National Institute of Public Health**  
**9<sup>th</sup> International Advisory Committee Meeting on EMF**  
**June 2004**  
**Activities in 2003-2004**

Concerning possible health risks to humans, several Japanese ministries are currently active in studies and health evaluations, related legislation, and information dissemination.

**• General Research Activities in Japan Related to EMF**

The Ministry of Health Labour and Welfare has undertaken to elucidate the possible effects of ELF- and RF-EMF exposure: general public studies are conducted by the National Institute of Public Health; occupational health is studied by the Japanese Industrial Safety and Health Association.

The Ministry of the Environment (MOE) continues to research ELF-EMF exposure measurements since 1990. Currently, MOE is focusing on dosimetry applied epidemiological studies to investigate the exposure of children to ELF magnetic fields.

In order to pursue scientific studies of RF-EMF effects, the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) established, in 1998, "The Committee to Promote Research on the Possible Biological Effects of Electromagnetic Fields" in cooperation with other relevant organizations and institutions, including medical and engineering experts. The committee conducts research to investigate the biological effects of RF-EMF toward better safety and promotion efforts, making assessments in close liaison with leading medical, biological and engineering specialists in the field. From 2002, the second term of the Committee's research project extends until 2007. This fiscal year's budget is 400 million yen (US\$3.5 M).

Since 1999, the Nuclear and Industrial Safety Agency (NISA), which belongs to The Ministry of Economy, Trade and Industry, has been examining the possible effects from power frequency MF exposure on tumorigenesis utilizing a two-stage carcinogenicity assay system in rodents, supervised by an independent peer review committee. NISA completed a mammary tumor promotion study in 2002, on female SD rats initially treated with DMBA and then exposed to 50 Hz MF. In 2003, a study of skin tumorigenesis in female SENCAR mice was also completed. Further, a study on brain tumorigenesis has been initiated in 2004. For 2005, NISA is planning to conduct studies on lymphoma generation.

**• Policies and Legislation Regarding EMF Exposure**

Based on current scientific knowledge, MPHPT formulated the "Radio Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields" taking into consideration various

safety factors, in 1990, and revised it in 1997. The standard values set out in these guidelines are fundamentally based on the values released by ICNIRP.

In order to implement safe and secure radio use, MPHPT regulations were established in accordance with these rules. MPHPT requires that radio stations install safety facilities for frequency strength. These rules have been enforced since October 1999, and are applied mainly to the radio equipment of broadcasting radio stations and non-mobile radio stations, such as cellular phone base stations. These rules define values for electromagnetic field strength in the general environment in accordance with the standard values utilized by the Radio Radiation Protection Guidelines.

frequency	E (V/m)	H (A/m)	S (mW/cm <sup>2</sup> )	average time (min)
10kHz - 30kHz	275	72.8		6
30kHz - 3MHz	275	$2.18 f^{-1}$		
3MHz - 30MHz	$824 f^{-1}$	$2.18 f^{-1}$		
30MHz - 300MHz	27.5	0.0728	0.2	
300MHz - 1.5GHz	$1.585 f^{1/2}$	$f^{1/2}/237.8$	$f/1500$	
1.5GHz - 300GHz	61.4	0.163	1	

(f denotes frequency in MHz.)

For cellular phones and other RF devices, which are used close to the human head, MPHPT regulates the allowed value of 2 W/kg (10-gram tissue, 6-minute average value) of radio energy absorption by the human head, and requires telecommunications manufacturers (cellular phones, for example), to maintain this standard since June 2002. This standard uses the Localized SAR value for the general environment as described in the Radio Radiation Protection Guidelines, to be applied to all radio equipment used in close proximity to the human body.

#### • Public Information Activities

To promulgate the possible risks associated with EMF, MPHPT and NISA have sponsored several open seminars regarding EMF and potential health effects for the general public.

To inform the public on the safety of power frequency EMF, NISA has organized a series of symposia held in Hokkaido, Tokyo, Osaka, Nagoya, Nagano and Okayama, and disseminated information by brochures and on the internet

([http://www.jet.or.jp/e\\_health/index.html](http://www.jet.or.jp/e_health/index.html)).

To apprise the public on the safety of RF-EMF, MPHPT distributes pamphlets, holds lectures and performs public relations activities in concert with their web page (<http://www.soumu.go.jp/english/index.html>).